

The Changes Farmall Brought to Farming

Brady Maher

Senior Project

English IV

17 December 2013

Thesis

The 1946 H Farmall is a well-known tractor because of its rich history, the many uses that it has, and the restoration process.

Outline

- I. Why I chose my project
 - A. Why is it important to me
 - B. History of it in our family
- II. History of the Farmall company and the H Tractor
 - A. How the company started
 - B. How many tractors were produced
- III. Use for the Farmall H tractor
 - A. How much power did it had
 - B. What could you pull with it
- IV. Restoration Process
 - A. What does it take to restore a Farmall H tractor

Abstract

International Harvester has always been a popular company for farm machinery, but they became even more well-known when they introduced the Farmall brand. Farmall was a company that changed farming for all farmers. The H series tractor was a popular tractor and handy for smaller farms. Today, Farmall tractors are kept in families as heirlooms and are a popular piece of machinery for collectors. I remember riding on this tractor many times as a kid, and I would like to make many more great memories with it. This is a great reason for me to restore it, and a way for me to learn more about the Farmall brand.

The Changes Farmall Brought to Farming

Farmall has changed farming since it was established. Tractors have changed the farming life in every family that works hard and live for what they do on the farm. Everyone has their own reason to choose a certain brand of tractor. Farmall is a company that really started with farming technology, and that is why classic tractors are remembered in families of the farmers who began using these tractors. Classic tractors are something to remember, and that is why I remember this specific one. The 1946 H Farmall is a well-known tractor because of its rich history, the many uses that it has, and the restoration process.

The Farmall H is significant tractor to me; even though it has not been in our family very long. I grew up with this tractor during part of my childhood. I do not remember when we bought the tractor, but I do remember what we used this tractor for and how I came to want to take it back home and restore it. This is not the only tractor that I grew up with and used, but it is the one I remember most. When we needed to do something that you could use a four-wheeler for, we used this tractor because we did not own one at the time. We also used this tractor for moving augers and getting cows out in the pasture. Those were the most memorable days to me on that tractor, because I would ride with dad to go out in the pasture to round them up. I knew it was time to gather cattle when we would call them, and they would not come up from pasture. So, to the H we went, and I would usually be the first person ready to go. Those were the days that I miss most about my childhood.

I never thought I would find out where the tractor had gone when we sold it on my grandpa's farm auction. Being too young, I did not know anyone who bought anything on the sale unless, it was my dad. A few years ago, I was told that one of my great uncles had purchased it. He bought the tractor from my dad because his dad had bought a brand new H when he was a

kid, and he wanted to have the same thing that his dad had owned; for his own memories. When this senior project came around, I thought of my past, and how I knew that the tractor was not in the best of shape, and I wanted to fix it up. This project has allowed me to restore my childhood tractor, so I can continue to make memories with it. From what I remembered, I knew it was not stuck, and I was not quite sure if it ran or not, but that was the least of my worries. I was determined to see this project through. The first step that I wanted to complete was the paint, because it did not have good paint on it when we sold it. When I got the tractor home, I found some more problems that I might have to fix and were more serious than I initially expected. However, I was not going to let them detour me from completing this dream.

The Farmall family has a rich history from where they started, until where they ended when they were bought out by Case. They started in 1847, when Cyrus Hall McCormick founded the McCormick Harvesting Machine Company in Chicago. They started out with equipment that would be pulled by horses; one piece, being the mechanical reaper. By 1858, his company was the largest farm equipment manufacturer in the United States. On May 13, 1884, after serving his company well, Cyrus Hall McCormick died. His son, Cyrus Jr., became president of the company. Then in 1902, they merged in with Deering Harvester Company and three others, Champion, Milwaukee, and Plano. Cyrus McCormick Jr. was the one who combined with the four other companies. They did all of this August 12, 1902, and became known as International Harvester Company. In 1910 to the early 20s, a designer from Fordson started to work with Farmall after his designs did not work so well. He had a problem with the original designs that he had made for Fordson. He realized that the tractors were too short for crops after you planted them and for picking crops at harvest. His name was Bert Benjamin, and he created the first narrow- front, rear wheel drive tractor that was handy for small farms to use. Instead of having

such a big sized machine like the Reaper. *Field of Tractors* says in the Farmall article, “Farmall tractors began on their road to fame with the introduction of what would become known as the tricycle design in 1923, narrowly-spaced front wheels allowed greater maneuverability for the Farmall tractors facilitating quicker working of the fields”. The narrow front was handy for moving around, but the problem that was figured out later on was it could be dangerous for the operator. With a narrow front, when a farmer would be on ditches or on a side hill that is a little steep, there was a danger of tipping or rolling the tractor over.

International Harvester began by shipping about 14 tractors across the country. Within two years, the company was shipping several hundreds of tractors throughout the country. In 1905, they started experimenting with machines building the tractor. The problem they had with the first model, was that what they made was not going to work well for small farms. Smaller farmers thought it was too big and clumsy for the uses that they needed it for. The first small tractor International Harvester came up with was the Mogul 8-16. This was a successful piece of machinery that made the company refine their whole idea of tractors. In 1939, they came out with the letter series, but before they came out with the letter series tractor, they had a few prototypes made in-between them and the Mogul 8-16. After the Mogul, the ones they came up with were the F-20, F-30, F-12, and F-14. All of these tractors and Mogul were a tricycle, or in other, words known as a narrow front tractor. These not only were easier to turn sharper, they also took up less space when you were storing them or putting them inside for the night.

In 1919, the McCormick Farmall was officially born. The International Harvester was the tractor that industrialized the country in 1922. Found on *Field of Tractors* in the article Farmall, “by 1926, International Harvester was ready for large scale production in its new Farmall works plant in Rock Island, Illinois”. This is when they came out with red paint instead of gray because

they thought of it as a safety color and could easily be seen. Found on *McCormick International USA* website in the article Beginnings-The McCormick Legacy, “this marked the beginning of ‘Big Red’ in the country”. The beginning of a new era had begun.

Finding out the date of the tractor is important in the restoration process. Found on a *sunddenlink* website found in the article, Dating your H, "how can I find out what year my Farmall H was made?" When they started the letter series tractors, they came up with a way to be able to tell what year it was. This is how I found out what year the Farmall H I decided to restore was. They made a chart with all the years they made the tractor, and you would look at your serial number to determine the age. For each year, they have the serial number that began and ended during that year. If your tractor is in between these numbers, then you found the year of your tractor. It was 1938 when the F series ended and the new series to started. In 1939, they started coming out with the letter series. The new letter series would consist of the A, B, BN, C, H, M, and MD. International Harvester, the company started, making the H in 1939 and made them through 1953. Found on *imarketingbiz* in the article Farmall H Technical and Background Information article, the Farmall H was, "an ideal, all-purpose tractor for diversified farms up to 160 acres, or for specialized farms raising such row crops as potatoes or sugar beets. It pulls two 14-inch bottoms, cultivates up to 35 acres of row crops a day, and speeds up other farm jobs in proportion". When they started the letter series, they had an industrial designer named Raymond Loewy come up with a smooth looking design for the new general-purpose tractors. Something that would catch a farmer’s eye and want it for something to use on his farm. They were giving American farmers new machines that would have more capabilities than any other company out there.

When the 1940s came around and the war started, the country wanted McCormick to stop making the tractors and do something for the war. In 1945, they did not make a single tractor on the production line. It was not until 1946 that the Doncaster factory site was returned to IHGG. Between 1968 and 1999, McCormick made it's name very popular from the variety of tractors they had made over the years. Between theses years, Case had taken interest in the International Harvester part of the company. This lead up to the Case company purchasing it and all the equipment was rebranded to be Case International. This is the time period that McCormick name started to fade away as a company and the tractor line started being made with the Case International name. In 2001, the McCormick Farmall tractor series was reintroduced as McCormick. I never realized until now that the company was still making tractors.

Farmall considered the A and B as the smaller tractors for smaller uses. The C and M were made for heavy work like plowing, discing and anything other heavy duty work. There is not a lot of information about the H other than they were an all around good tractor for many things. I found they were good for planting, plowing, and little things you might have to do in the yard. Initially, an H tractor was about \$765 until they came out with rubber tires for them they went up to \$962. It was around 1941 when they made it so a buyer had the choice of steel wheels or rubber. There were over 390,000 sold in North America through the time they were made, and it was considered to be the best selling tractor. The H was later on replaced by the Super H in 1952; a year later, they stopped making the regular H.

Now the H had a good amount of power for its little four-cylinder engine. According to *Tractor Data* website, "2.5L engine with the drawbar horsepower of 24.17, and 26.60 hp on the belt". They said it was the row crop version of the W-4. You could get the H that burned gasoline, kerosene, or distillate, all of these options had the same power testing on drawbar and

belt. Classic tractors are not known for having a great amount of power, this is unlike tractors in present time.

Initially, I did not think there would be much practical use for an H because it did not seem like it would be big enough to do any heavy duty work. Now, I realize that some uses are: plowing, seeding, towing, discing, planting, cultivating, along with cropping, mowing and trimming, and also baling hay. These old tractors have been used for many years. It is quite impressive when you know that people found a way to make such a machine to be faster and better than a horse. Farmers used these little tractors for days and hours at a time. Even though it is not large, they used to use them for many hours or days at a time, and many people are still using them today for projects. Still, there are farmers out there that choose to farm all the land they own with antique tractors. They might not be specifically Farmall tractors, but there are all types of tractors still being used today.

Restoring a tractor can be very difficult if you are not sure what steps you need to do to complete the process. Learning is a big part of the process of fully restoring a tractor. Working on these tractors may seem simple to some people, but issues arise when they have been sitting around for years. A person can identify in a hurry. When I first got the idea to restore the H, I did not think it was going to be difficult. Most things will never go the way you think, and for me, that was true from the start. I did not expect that I was going to have to work on the transmission, fix the hood, or for the main gear case seal to go out. So, I started with the bigger problems than I initially realized. I enlisted the help of John Klassy to help out.

We started with the transmission and I thought I could take the cover off and be able to fix the gears; however, I was wrong. We still did not know how to do this whole process, so we found a book in John Klassy's shop for Farmall 300s to 450s. It took a while to find where all the

transmission information was and what we needed to do to fix it. We figured out that they had the same transmission types in them, and that made it easier to get information on how to fix it. We found out what gears I needed to fix and then read that we needed to split the tractor in half in order to take out the gears. When we split it, we got the top shaft out with no problem, but found a few more parts we needed for the transmission. When we got that all figured out, we started to take out the bottom shaft. That became a problem very quickly because we could not get the shaft to move either way. At the end of that day, we decided we needed a new plan of action.

Later on, we did some research on how to take the bottom shaft out. We found out what parts for the transmission are currently available. Luckily, the two gears we needed were still available. At that point, we had not figured out how to get the shaft out to fix the bottom of the transmission. When we did some looking, we found a website called, *Yesterday's Tractors*, a blog that had all kinds of ideas on how to do it. One guy said what we would have to do and what was going to be in the way. We found out that we were going to have to take the whole PTO shaft out of the rear end. The next step would be to take a wheel puller and pull the end off of the shaft that connects to the belly pump. When I got to it though he did not have it listed right on how to take that piece off, the piece was screwed on like a nut. The third step was that we were suppose to be able to move the whole shaft back and forth for it to come out a hole and turn it up to pull it out. Finally, all I would have to do is order the two gears. Found on "*Yesterday's Tractors*" in the blog page, Rebuilding 1946 Farmall H Transmission, it states that,

the PTO shaft has a pilot that runs inside a bushing in the back of the bottom countershaft. You can either remove the whole unit (5 bolts), which is easiest, or the seal/bearing retainer (2 bolts) and pull the shaft and engagement collar tube

back away from the countershaft. The front and rear bearings of the countershaft should be removed too before trying to remove the shaft. The rear bearing has the mean snap ring that must be removed to slide the bearing off the shaft and out the back of the bulkhead that separates the transmission from the differential areas. It is tight with the gears on the countershaft but it will lift out. That is the way it went in at the factory.

After some research, we know that the parts that I do need for the rest of the tractor are available. To complete our task, we will need: gaskets for the valve cover, a transmission plate, and the two seals that go behind the transmission bearing, we have for splitting the tractor in half to get at the transmission better. During my search, I was surprised on all the parts that are still available. Basically, everything you can think of that you would need for this tractor is out there. The most difficult part is you need to know where to find it.

When a person figures out all the parts you need for your tractor, it is important to order them as soon as you can so you can start replacing them to find out if your tractor will run. Some people may have a little more work to do if they have a tractor with a stuck engine when the cylinders sit too long and get rusty in the block. That will add on to the process of restoration time, but you will learn a lot more about engines and how they originated if you have to fix that part. However, once you get the tractor running, you may have more issues arise like fluid leaks or other problems. This is how it went for me, but fortunately I did not have to deal with a stuck engine, and have been able to fix any major issues along the way.

Once all the mechanical problems get done, then you start other jobs on it like painting to complete the restoration process. It is always the best idea to completely clean the tractor off once you get all of your mechanical work done. The first step would be to get all the grease off

exterior to get ready to paint. When you get the grease and chunks of dirt off you can make sure you have everything off that you need by sand blasting every separate piece. When you get it all sand blasted, then you can get ready for priming and painting the tractor on the parts you have separated. It is important to make sure to give it plenty of time to let the paint dry completely before putting the parts back together. The final step when you get it all put back together and dry, is you can start putting on decals and warning signs to complete the restoration process.

The 1946 H Farmall is a well-known tractor because of its rich history, the many uses that it has, and the restoration process. International Harvester was one of the most powerful and popular companies of its time in the 1900's. The Farmall H was a popular tractor of its time, and still is today for collectors and some farmers. Even though the Farmall Company is not around today, its legacy will be passed down for generations through restored tractors. The days that I work on this tractor in the future, will take me back to the days I remember the most about this tractor. I plan on continuing the legacy of the Farmall H tractor in my family for generations to come.

Works Cited

- "Farmall H." *TractorData.com Tractor Information*. N.p., n.d. Web. 09 Jan. 2014.
- "The Farmall Tractor – Treasured In American History." *I-Marketing-Biz*. N.p., n.d. Web. 09 Jan. 2014.
- "History | Legacy | McCormick USA." *History | Legacy | McCormick USA*. N.p., n.d. Web. 09 Jan. 2014.
- "Specifications." *Specifications*. N.p., n.d. Web. 09 Jan. 2014.
- "Tractors and Tractor Parts Only at Field Of Tractors." *Tractors and Tractor Parts Only at Field Of Tractors Farmall Comments*. N.p., n.d. Web. 13 Jan. 2014.
- "Yesterday's Tractors :: View Topic - Rebuilding 1946 Farmall H Transmission." *Yesterday's Tractors :: View Topic - Rebuilding 1946 Farmall H Transmission*. N.p., n.d. Web. 09 Jan. 2014.